

REMARKS

Claims 1-27 are now present in this application. Reconsideration of the application, as amended, is respectfully requested.

Claims 3 and 10 are objected to for certain informalities. Because these informalities have now been addressed, it is requested that this objection now be reconsidered and withdrawn.

The specification has also been objected to for an informality. In fact, one embodiment of claim 9 is clearly stated in FIG.5 and line 22 of page 20 to line 10 of page 21 of the present specification. It is believed that this objection has also been addressed and it is requested that this objection now be reconsidered and withdrawn.

Claims 1-27 stand rejected under 35 U.S.C. 112. This rejection is respectfully traversed.

Claims 1-2, 9 and 24 stand rejected under 35 U.S.C 102(e) as being anticipated by Sugar et al. (US 6,728,517). This rejection is respectfully traversed.

Claims 25-27 stand rejected under 35 USC 103 as being unpatentable over Sugar. This rejection is respectfully traversed.

The independent claim 1 has been amended to overcome these rejections as will now be explained.

(1) First in the present invention, Figures 3 and 4 illustrate one exemplary embodiment of the signal down-conversion of the signal receiving portion. In Fig. 3, a band signal of 2.4 GHz is received. The single frequency synthesizer provides band-mixing signals of 3618 MHz and 1206 MHz. By mixing with the band-mixing signal of 3618 MHz, the band signal of 2.4 GHz is down converted to the first middle frequency of 1218MHz. By mixing with the band-mixing signal of 1206 MHz, the signal is further down-converted to the first base frequency of 30 MHz. In Fig. 4,

a band signal of 5150 MHz is received. The single frequency synthesizer provides band-mixing signals of 3885 MHz and 1295 MHz. By mixing with the band-mixing signal of 3885 MHz, the band signal of 5150 MHz is down converted to the second middle frequency of 1265 MHz. By mixing with the band-mixing signal of 1295 MHz, the signal is further down-converted to the second base frequency of 30 MHz. In this exemplary embodiment, the first middle frequency (1218 MHz) approximates the second middle frequency (1265 MHz). One advantage of the similar first and second middle frequency is that the design of the signal receiving portion is simplified. As shown in Fig. 2 of our invention, the band signal of 2400 MHz and 5150 MHz may share one single mixer 110 by utilizing the upper side band and the lower side band of the mixer 100.

Sugar, however, does not teach down-converting the received signals of different bands to the similar middle frequencies. For example, as shown in Fig. 3 of Sugar, for the signal emission portion 140, the frequency synthesizer (260, 262, 264, 266, and 265) provides a first band-mixing signal (noted as LO1 in the following) for the mixers 144 and 154 to down-convert the received signal (noted as RF) to a middle frequency (noted as IF), and provides a second band-mixing signal (noted as LO2) for the mixers 148 and 156 to down-convert the signals of the middle frequency to a base frequency. Because of the divider 265, $LO1=4*LO2$. As known by one skilled in the art, the other equations should be satisfied comprises: $RF=LO1+LO2$ and $IF=RF-LO1$. Therefore, when the received signal is of 2400 MHz, LO1 is 1.92 GHz, LO2 is 0.48 GHz, and IF is 0.48 GHz. When the received signal is of 5150 MHz, LO1 is 3.618 GHz, LO2 is 1.206 GHz, and IF is 1.295 GHz. It's obvious that Sugar doesn't teach down-converting the received signals of different bands to the similar middle frequencies.

(2) In addition, as shown in Fig. 3 of the present application, the local oscillator 303 generates a signal of 2412 MHz. As shown in Fig. 4 of the present application, the local oscillator 403 generates a signal of 2590 MHz. The signals generated by the local oscillators 303 and 403 are of similar frequency. Therefore, in our invention, one single local oscillator is enough to down-convert signals of 2400 MHz or 5150 MHz.

As shown in Fig. 3 of Sugar, however, a plurality of local oscillators (262, 264, and 266) is required.

(3) Additionally, some of the content of the original claim 2 has now been combined into the amended claim 1. The limitation of the original claim 1, in which band signals are limited as 2.4GHz and 5GHz, are removed from claim 1 and described in the now pending claim 2 as a dependent claim.

(4) Claims 24 and 25 are amended to attached to the independent claim 1. Because independent claim 1 should now be in condition for allow all dependent claims should also be in condition for allowance.

All claims now in the instant application should be in condition for allowance. Withdrawal of the 35 USC 112, 102 (e) and 103 rejections is respectfully requested.

Conclusion

Applicant respectfully requests Examiner's reconsideration of the application and the allowance of the now-pending claims 1-27. An early Notice of Allowance is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Joe McKinney Muncy Reg. No.

Application No. 10/713,022
Amendment dated January 8, 2007
Reply to Office Action of September 7, 2006

Docket No.: 0941-1763PUS1

32,334 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: January 8, 2007

Respectfully submitted,

By 

Joe McKinney Muncy

Registration No.: 32,334

BIRCH, STEWART, KOLASCH & BIRCH, LLP

8110 Gatehouse Road

Suite 100 East

P.O. Box 747

Falls Church, Virginia 22040-0747

(703) 205-8000

Attorney for Applicant

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Fig 2. The replacement drawing is being submitted to correct the inadvertent labeling of two components as "140". One of the components is now correctly labeled as "120".

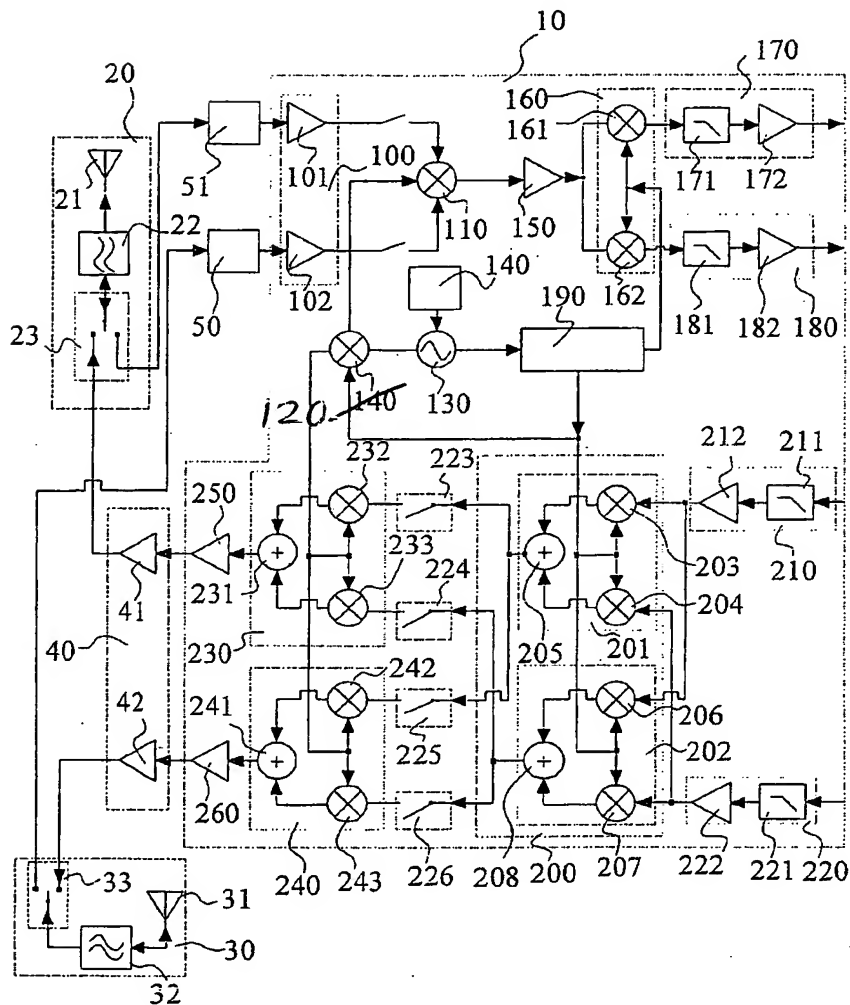


FIG. 2